

Amendments to the Claims:

1-25. (Canceled).

26. (New) A microcomputer having a real-time trace function, said microcomputer comprising:

 a central processing unit for executing an instruction;
 instruction address setting means for setting a start address and end address for specifying a trace range within a program as instruction address for detecting an execution of a plurality of instructions to be executed by said central processing unit; and

 trace information output means for outputting status information including mode status of said central processing unit to a plurality of output terminals,

 wherein said trace information output means includes match status output means for outputting a match status through one of said output terminals and omitting means for omitting second start address match during first start address match and end address match, when central processing unit is in a user program mode.

27. (New) A debugging system for a target system comprising:

 the microcomputer as defined in claim 26; and
 trace information acquisition means for receiving said match status from said microcomputer, and acquiring trace information by controlling a start and end of the acquisition of trace information, based on said match status.